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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,955	08/04/2003	Louis J. Bintz	14414-011001	5172
26191	7590	06/30/2005	EXAMINER	
FISH & RICHARDSON P.C. PO BOX 1022 MINNEAPOLIS, MN 55440-1022			VARGOT, MATHIEU D	
			ART UNIT	PAPER NUMBER
			1732	

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/633,955

Applicant(s)

BINTZ ET AL.

Examiner

Mathieu D. Vargot

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/15/2004.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_.

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1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Dorn et al (see 2 and 9-15 in Fig. 3; col. 3, lines 25-37 and lines 57-65).

The applied reference discloses the instant method of making a polymer waveguide structure by depositing different layers (2, 9-15 in Fig. 3) of nonlinear optical films on a substrate, poling and crosslinking the films to make an optical switch. Note that all films are taught as being crosslinked and that such would occur either during or after the poling.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 15, 17-20 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dorn et al.

Dorn et al discloses the basic claimed method of making a polymer waveguide as set forth in paragraph 1, supra, the applied reference essentially lacking clear disclosures of the refractive index relationship between the layers, the temperature of the crosslinking, crosslinking before poling and exactly how the layers are deposited. Note that Dorn et

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al discloses that the different layers would have different refractive indices and that they are deposited in some manner. It is submitted that the instant methods of deposition are all well known in the art and would have been obvious methods by which Dorn et al would have deposited the various layers to facilitate the coating of the substrate or previously applied layer. The exact refractive index of each layer would have been obvious dependent on the exact utility for the waveguide switch. Clearly, the crosslinking temperature would have been obvious dependent on the exact polymer used. Finally, Dorn et al discloses crosslinking either during or after the poling, which would be conventional to lock the chromophores in place. However, it also would have been obvious to have crosslinked prior to poling should the chromophores already be in their desired orientation. Dorn et al teaches that the substrate would be a glass and it is submitted that using the materials as set forth in instant claim 27 therefor would have been obvious dependent on the exact optical properties desired.

3. Claims 4-14 and 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dorn et al in view of the article to Oh et al in Appl. Phys. Lett. 2000, 76(24):3525-3527.

Dorn et al already set forth discloses the basic claimed process for making a polymer waveguide lacking essentially the aspects of dry etching the first electrooptic layer to form a rib (MZ) before the second film is formed in proximity to the first film. The article to Oh et al discloses forming MZ ribs in an electrooptic layer and such would have been an obvious feature in the process of the primary reference to make such a modulator.

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Oh et al discloses a mask to pattern the photoresist (and the electrooptic layer) and these masks are typically made of metal. It is submitted that the formation of a passive or buffer cladding is well known in the art and would have been an obvious modification to the process of the primary reference to ensure the integrity of signal transmission.

The exact thickness of the layers and refractive indices therefore would have been obvious dependent on the exact optical properties desired for the switch. Dry etching the second electrooptic layer would have been obvious dependent on the exact optical properties desired for the switch and/or refractive indices for the layers. The employment of an electrooptic layer as the cladding would have been obvious for the same reason.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mathieu D. Vargot whose telephone number is 571 272-1211. The examiner can normally be reached on Mon-Fri from 9 to 6.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni, can be reached on 571 272-1196. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M. Vargot  
June 27, 2005

  
Mathieu D. Vargot  
Primary Examiner  
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6/27/05